THAT CLAIMED IS:

1. A power generation system comprising:

a stator core frame support member having a lower inner surface portion and a lower outer surface portion, the lower outer surface portion positioned to contact a support surface;

a generator stator core including a plurality of keybars positioned spaced-apart and extending along outer peripheral portions of the generator stator core, the generator stator core positioned to overlie the lower inner surface portion of the stator core frame support member and further having a lower end portion positioned spaced-apart from and not in contact with bottom portions of the lower inner surface portion of the frame support member; and

a core supporter connected to the stator core frame support member and positioned to contact the plurality of keybars along outer side peripheries of the generator stator core, the core supporter having first and second core connecting means for connecting the stator core frame support member to the generator stator core to thereby relieve vibration and prevent lateral movement of the generator stator core, and further stabilize the power generation system during operation, the first core connecting means being connected to a first medial side outer peripheral portion of the generator stator core and the second core connecting means being connected to a second medial side outer peripheral portion of the generator stator core and positioned opposite the first medial side outer peripheral portion of the generator stator core so that the first and second core connecting means are positioned substantially symmetric about opposite medial side portions of the generator stator core.

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2. The power generation system as defined in Claim 1, wherein the generator stator core further comprises a substantially annular shape, the stator core frame support member further comprises a substantially semi-annular shape the plurality of keybars further comprises less than eight keybars positioned spaced-apart and extending along outer peripheral portions of the generator stator core.

3. The power generation system as defined in Claim 1, further comprising at least two keybars positioned spaced-apart along a first outer peripheral side portion of the generator stator core, and further comprising at least another two keybars positioned spaced-apart along a second side outer peripheral side portion of the generator stator core, the second outer peripheral side portion of the generator stator core positioned opposite from and symmetric to the first outer peripheral side portion of the generator stator core.

4. The power generation system as defined in Claim 1, wherein the core supporter is further positioned to contact less than all of the keybars positioned along the outer side peripheries of the generator stator core.

5. The power generation system as defined in Claim 4, wherein the first core connecting means is positioned to extend substantially parallel to the second core connecting means substantially the entire length of the generator stator core, and wherein each of the first and second core connecting means further comprises at least one biasing support member positioned to connect the stator core frame support member with the generator stator core.

6. The power generation system as defined in Claim 5, wherein the at least one biasing support member further comprises an elongate spring bar and a plurality of bracket spring assemblies connected to and positioned spaced-apart along the elongate spring bar, each of the plurality of bracket spring assemblies comprising a spring mounting frame and a plurality of spaced-apart key block brackets connected to the spring mounting frame.

7. The power generation system as defined in Claim 6, wherein the plurality of key block brackets further comprise first and second key block brackets, and wherein the first key block bracket further comprises a first key block and the second key block bracket further comprises a second key block, the first and second key blocks positioned to matingly contact the first and second key block brackets, and wherein the first key block bracket is positioned to connect to a first end portion of the spring mounting frame and the second key block bracket is positioned along a second end portion of the spring mounting frame, opposite the first end portion of the spring mounting frame.

8. The power generation system as defined in Claim 7, wherein one of the plurality of key blocks is connected to one of the plurality of keybars positioned along the outer peripheral portions of the generator stator core, each one of the plurality of key blocks positioned to connect the stator core frame support member to the generator stator core to thereby stabilize the power generation system, relieve vibration and prevent lateral movement during operation of the generator stator core.

9. The power generation system as defined in Claim 5, wherein the at least one biasing support member further comprises a plurality of elongate spring bars, the plurality of spring bars positioned substantially parallel along the at least one biasing support member, the plurality of spring bars further comprising a plurality of bracket spring assemblies connected thereto and positioned spaced-apart along the plurality of spring bars, each of the bracket spring assemblies comprising a spring mounting frame and a plurality of spaced-apart key block brackets connected to the spring mounting frame.

10. A generator stator core support apparatus for stabilizing a power generation system, eliminating lateral movement, and relieving vibration of a generator stator core, the apparatus comprising:

first core connecting means for connecting the generator stator core to a stator core frame support when the generator stator core is positioned to overlie lower inner surface portions of the stator core frame support, the first core connecting means positioned to contact a first outer peripheral medial side portion of the generator stator core and a first upper medial side portion of the stator core frame support; and

second core connecting means for connecting the generator stator core to the stator core frame support, the second core connecting means positioned to contact a second outer peripheral medial side portion of the generator stator core positioned opposite the first outer peripheral medial side portion of the generator stator core, and further positioned to contact a second upper medial side portion of the stator core frame support positioned opposite the first upper medial portion of the stator core frame support, the

combination of the first and second core connecting means positioned to support the generator stator core when connected thereto without a support contact between a lower or upper end portion of the generator stator core and the inner surface of the stator core frame support.

11. The generator stator core support apparatus as defined in Claim 10, wherein the first core connecting means is positioned to extend substantially parallel to the second core connecting means substantially the longitudinal length of the generator stator core, and wherein each of the first and second core connecting means further comprises a biasing support member positioned to connect the stator core frame support with the generator stator core.

12. The generator stator core support apparatus as defined in Claim 11, wherein the biasing support member further comprises an elongate spring bar and a plurality of bracket spring assemblies connected to and positioned spaced-apart along the elongate spring bar, and wherein the plurality of bracket spring assemblies further comprises a spring mounting frame and a plurality of spaced-apart key block brackets connected thereto.

13. The generator stator core support apparatus as defined in Claim 12, wherein each of the plurality of key block brackets further comprises first and second key block brackets, and wherein the first key block bracket further comprises a first key block and the second key block bracket further comprises a second key block, the first and second key blocks positioned to matingly contact the first and second key block brackets, and wherein the first key block bracket is

positioned to connect to a first end portion of the spring mounting frame and the second key block bracket is positioned to connect to a second end portion of the spring mounting frame, opposite the first end portion of the spring mounting frame.

14. The generator stator core support apparatus as defined in Claim 13, wherein one of the plurality of key blocks is positioned to connect to one of a plurality of keybars positioned along outer peripheral portions of the generator stator core, the key block further positioned to connect the generator stator core frame support to the generator stator core.

15. The generator stator core support apparatus as defined in Claim 11, wherein the biasing support member further comprises a plurality of elongate spring bars positioned parallel along the biasing support member and comprising a plurality of bracket spring assemblies positioned spaced-apart to connect thereto, each of the bracket spring assemblies comprising a spring mounting frame and a plurality of spaced-apart key block brackets connected thereto.

16. A machine support apparatus for stabilizing a system, eliminating lateral movement and relieving vibration of a machine, the apparatus comprising:

first connecting means for connecting the machine to a frame support when the machine is positioned to overlie inner surface portions of the frame support, the first connecting means positioned to contact a first outer peripheral medial side portion of the machine and further positioned to contact a first medial side portion of the frame support; and

second connecting means positioned to contact a second outer peripheral medial side portion of the machine positioned opposite the first outer peripheral medial side portion of the machine, and further positioned to contact a second upper medial side portion of the frame support positioned opposite the first upper medial portion of the frame support, for connecting the machine to the frame support, the combination of the first and second connecting means further positioned to support the machine when connected thereto without a support contact between a lower or upper end portion of the machine and the inner surface of the frame support.

17. The machine support apparatus as defined in Claim 16, wherein the first connecting means is positioned to extend substantially parallel to the second connecting means substantially the length of the machine, and wherein each of the first and second connecting means further comprises a biasing support positioned to connect the frame support member with the machine.

18. The machine support apparatus as defined in Claim 17, wherein the biasing support member further comprises an elongate spring bar and a plurality of bracket spring assemblies connected to and positioned spaced-apart along the elongate spring bar, and wherein each of the plurality of bracket spring assemblies further comprises a spring mounting frame and a plurality of spaced-apart key block brackets connected to the spring mounting frame.

19. The machine support apparatus as defined in Claim 18, wherein the plurality of key block brackets further comprises first and second key block brackets,

and wherein the first key block bracket further comprises a first key block and the second key block bracket further comprises a second key block, the first and second key blocks positioned to matingly contact the first and second key block brackets.

20. The machine support apparatus as defined in Claim 19, wherein the first key block bracket is positioned to connect to a first end portion of the spring mounting frame and the second key block bracket is positioned to connect to a second end portion of the spring mounting frame opposite the first end portion of the spring mounting frame, and wherein one of the plurality of key blocks is positioned to connect to one of a plurality of keybars positioned along outer peripheral portions of the machine, the key block further positioned to connect the frame support to the machine.

21. The machine support apparatus as defined in Claim 17, wherein the biasing support member further comprises a plurality of elongate spring bars positioned parallel along the biasing support member and comprising a plurality of bracket spring assemblies connect thereto and positioned spaced-apart, each of the bracket spring assemblies comprising a spring mounting frame and a plurality of spaced-apart key block brackets connected thereto.

22. A stator core biasing support member for a power generation system stabilizer, the biasing support member comprising:

an elongate spring bar positioned to connect to a stator core frame support and having a length

substantially equal to the longitudinal length of a generator stator core having a plurality of keybars; and

a plurality of bracket spring assemblies connected to and positioned spaced-apart along portions of the elongate spring bar and positioned to connect to the plurality of keybars of the stator core.

23. The stator core biasing support member as defined in Claim 22, further comprising a plurality of elongate spring bars positioned to connect to the stator core frame support member, the plurality of spring bars having a length substantially equal to the longitudinal length of the generator stator core and extending parallel along portions of the generator stator core.

24. The stator core biasing support member as defined in Claim 22, wherein the plurality of bracket spring assemblies further comprises a spring mounting frame comprising a plurality of spaced-apart key block brackets connected thereto.

25. The stator core biasing support member as defined in Claim 24, wherein the plurality of key block brackets further comprises first and second key block brackets, and wherein the first key block bracket further comprises a first key block and the second key block bracket further comprises a second key block, the first and second key blocks positioned to matingly contact the first and second key block brackets.

26. The stator core biasing support member as defined in Claim 25, wherein the first key block bracket is positioned to connect to a first end portion of the spring mounting frame and the second key block bracket is positioned to connect to a second end portion of the

spring mounting frame, opposite said first end portion of the spring mounting frame.

27. The stator core biasing support member as defined in Claim 26, wherein one of the plurality of key blocks is connected to one of a plurality of keybars positioned along outer peripheral portions of the generator stator core, each one of the plurality of key blocks positioned to connect the stator core frame support to the generator stator core to thereby stabilize the power generation system, relieve vibration and prevent lateral movement of the generator stator core during operation.

28. A method of stabilizing a power generation system, relieving vibration and eliminating lateral movement of a generator stator core during operation, the method comprising the steps of:

attaching a first core supporter to a first medial side portion of a stator core frame support;

attaching a second core supporter to a second medial side portion of the stator core frame support, the second medial side portion positioned opposite the first medial side portion so that a combination of the first and second core supporters are positioned symmetrically along portions of the stator core frame support;

positioning the generator stator core to overlie the stator core frame support; and

forming a connection between the generator stator core and the stator core frame support without support contact between a lower or upper end portion of the generator stator core and the stator core frame support.

29. The method as defined in Claim 28, further comprising the step of contacting less than all of a plurality of keybars positioned on the stator core with the first and second core supporters to thereby connect the generator stator core to the stator core frame support.

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